APPENDIX B

Frequency of Maintenance Tests

NETA recognizes that the ideal maintenance program is reliability-based, unique to each plant and to each piece of equipment. In the absence of this information and in response to requests for a maintenance timetable, NETA's Standards Review Council presents the following time-based maintenance schedule and matrix.

One should contact a NETA Accredited Company for a reliability-based evaluation.

The following matrix is to be used in conjunction with NETA's Frequency of Maintenance Tests table. Application of the matrix is recognized as a guide only.

Specific condition, criticality, and reliability must be determined to correctly apply the matrix. Application of the matrix, along with the culmination of historical testing data and trending, should provide a quality electrical preventive maintenance program**.**

MAINTENANCE FREQUENCY MATRIX				
		EQUIPMENT CONDITION		
		POOR	AVERAGE	GOOD
EQUIPMENT RELIABILITY REQUIREMENT	LOW	1.0	2.0	2.5
	MEDIUM	0.50	1.0	1.5
	HIGH	0.25	0.50	0.75

APPENDIX B (cont.)

Inspections and Tests
(Frequency in Months)
Multiplier for Inspections and Tests
(Multiply Value by Matrix)

Section	Description	Visual	Visual & Mechanical	Visual & Mechanical & Electrical
7.1	Switchgear & Switchboard Assemblies	12	12	24
7.2	Transformers			
7.2.1.1	Small Dry-Type Transformers	2	12	36
7.2.1.2	Large Dry-Type Transformers	1	12	24
7.2.2	Liquid-Filled Transformers	1	12	24
	Sampling	–	–	12
7.3	Cables			
7.3.2	Low-Voltage Cables	2	12	36
7.3.3	Medium- and High-Voltage Cables	2	12	36
7.4	Metal-Enclosed Busways	2	12	24
	Infrared Only	–	–	12
7.5	Switches			
7.5.1.1	Low-Voltage Air Switches	2	12	36
7.5.1.2	Medium-Voltage Metal-Enclosed Switches	–	12	24
7.5.1.3	Medium- and High-Voltage Open Switches	1	12	24
7.5.2	Medium-Voltage Oil Switches	1	12	24
7.5.3	Medium-Voltage Vacuum Switches	1	12	24
7.5.4	Medium-Voltage SF_6 Switches	1	12	24
7.5.5	Cutouts	12	24	24
7.6	Circuit Breakers			
7.6.1.1	Low-Voltage Insulated-Case/Molded-Case CB	1	12	36
7.6.1.2	Low-Voltage Power CB	1	12	36
7.6.1.3	Medium-Voltage Air CB	1	12	36
7.6.2	Medium-Voltage Oil CB	1	12	36
	Sampling	–	–	12
7.6.2	High-Voltage Oil CB	1	12	12
	Sampling	–	–	12
7.6.3	Medium-Voltage Vacuum CB	1	12	24
7.6.4	Extra-High-Voltage SF_6	1	12	12
7.7	Circuit Switchers	1	12	12
7.8	Network Protectors	12	12	24

APPENDIX B (cont.)
Inspections and Tests

(Frequency in Months)

Multiplier for Inspections and Tests

(Multiply Value by Matrix)

Section	Description	Visual	Visual & Mechanical	Visual & Mechanical & Electrical
7.9	Protective Relays			
7.9.1	Electrical/Mechanical and Solid State	1	12	12
7.9.2	Microprocessor-Based	1	12	12
7.10	Instrument Transformers	12	12	36
7.11	Metering Devices	12	12	36
7.12	Regulating Apparatus			
7.12.1.1	Step-Voltage Regulators	1	12	24
	Sample Liquid	–	–	12
7.12.1.2	Induction Regulators	12	12	24
7.12.2	Current Regulators	1	12	24
7.12.3	Load-Tap-changers	1	12	24
	Sample Liquid	–	–	12
7.13	Grounding Systems	2	12	24
7.14	Ground-Fault Protection Systems	2	12	12
7.15	Rotating Machinery			
7.15.1	AC Motors	1	12	24
7.15.3	DC Motors	1	12	24
7.15.1	AC Generators	1	12	24
7.15.3	DC Generators	1	12	24
7.16	Motor Control			
7.16.1.1	Low-Voltage Motor Starters	2	12	24
7.16.1.2	Medium-Voltage Motor Starters	2	12	24
7.16.2.1	Low-Voltage Motor Control Centers	2	12	24
7.16.2.2	Medium-Voltage Motor Control Centers	2	12	24
7.17	Adjustable Speed Drive Systems	1	12	24
7.18	Direct-Current Systems			
7.18.1	Batteries	1	12	12
7.18.2	Battery Chargers	1	12	12
7.18.3	Rectifiers	1	12	24
7.19	Surge Arresters			
7.19.1	Low-Voltage Devices	2	12	24
7.19.2	Medium- and High-Voltage Devices	2	12	24

APPENDIX B (cont.)
Inspections and Tests

(Frequency in Months)

Multiplier for Inspections and Tests

(Multiply Value by Matrix)

Section	Description	Visual	Visual & Mechanical	Visual & Mechanical & Electrical
7.20	Capacitors and Reactors			
7.20.1	Capacitors	1	12	12
7.20.2	Capacitor Control Devices	1	12	12
7.20.3.1	Reactors – Dry-Type	2	12	24
7.20.3.2	Reactors – Liquid-Filled	1	12	24
	Sampling	–	–	12
7.21	Outdoor Bus Structures	1	12	36
7.22	Emergency Systems			
7.22.1	Engine Generator	1	2	12
	Functional Testing	–	–	2
7.22.2	Uninterruptible Power Systems	1	12	12
	Functional Testing	–	–	2
7.22.3	Automatic Transformer Switches	1	12	12
	Functional Testing	–	–	2
7.23	Telemetry/Pilot Wire SCADA	1	12	12
7.24	Automatic Circuit Reclosers and Line Sectionalizers			
7.24.1	Automatic Circuit Reclosers, Oil/Vacuum	1	12	24
	Sample	–	–	12
7.24.2	Automatic Line Sectionalizers, Oil	1	12	24
	Sample	–	–	12
7.27	EMF Testing	12	12	12